ABSTRACT

Dispersion is measured for an end-to-end link using two carrier wavelengths with a phase-synchronized signal modulated on each, and a single receiver that detects the BER of the combined fields. The power ratio of the two fields is chosen such that the weaker field modulates the eye of the stronger field, leading to slight periodic eye closure $BER(\tau) \cong BER(\tau + T_B)$ whenever the relative group delay changes by the bit period T_B. The magnitude of the relative group delay can therefore be inferred from the undulated BER response as a function of the wavelength detuning. A fit function is selected for the group delay response and the dispersion parameter D and dispersion slope S are calculated from this fit function after the function parameters are determined.